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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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EXAMINER

CHANG, EDITH M

ART UNIT

PAPER NUMBER

2637

DATE MAILED: 09/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-----------------|--------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/965,657 | MELAVA, JARI | |
| | Examiner | Art Unit | |
| | Edith M. Chang | 2637 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments/Remarks

1. Applicant's arguments filed on June 30, 2005, have been fully considered but they are not persuasive.

Argument: Applicant argues that the M/S half speed circuit means of Craninckx is not the polyphase filter recited in the claim.

Response: In Fig.3 of Craninckx discloses the M/S half speed circuit means (as the polyphase filter) producing one or more output phase signals, F4.I (0°), F4.Q (90°), $\overline{F4.I}$ (180°) and $\overline{F4.Q}$ (270°), hence the Craninckx's circuit means is the polyphase filter producing one or more output phase signals as claimed.

Argument: The Craninckx reference discloses and teaches the use of dividers ("flipflop") to generate a 90 degree phase difference signal and then divides the divided signal a second time. Therefore, the frequency of the input signal is divided by two. In contrast, in Applicant's invention the frequency of the input signal is not divided by two.

Response: How does the 90 degree phase difference signal being generated is not the subject matter in the claim, and the Applicant's invention of the frequency of the input signal is not divided by two is not recited in the claim. The limitations described in the specification are not read in the claims, if they are not recited in the claim.

Claim Objections

2. Claims 5-6 and 13 are objected to because of the following informalities:

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Claim 5, lines 1-2: "the division ratio" should be "the division ratio of the fractional multi-modulus prescaler", otherwise, "the division ratio" lacks antecedent basis.

Claim 13, line 7: "the selected phase signal" should be "the selected phase", since the step of selecting selects one or more *phases*; line 8: "the phase signals" should be "the phases", since there are "*phases*" selected in the selecting step.

Claim 6 is dependent on the objected claim 5.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-13 are rejected under 35 U. S. C. 102(b) as being anticipated by Craninckx et al. ("A 1,75-GHz/3-V Dual-Modulus Divide-by-128/129 Prescaler in 0.7- μ m CMOS" IEEE Journal of Solid-State Circuits, VOL. 31, NO. 7, July 1996, pages 890-897).

Regarding **claims 1, 9 & 13**, in Fig. 1, Craninckx et al. teaches a PLL fractional-N frequency synthesizer with a prescaler and in Fig.3, a dual modulus prescaler of the frequency synthesizer and its method, the prescaler comprises: a M/S Half speed circuit/means (as the polyphase filter) receiving a signal on inputs F2 and F2 and

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outputting one or more phase signals having a phase difference 90 degree (Fig.3 F4.I, F4.Q, $\overline{F4.I}$, $\overline{F4.Q}$, page 891, the right column, lines 4-8) related to each other;

a Phase-select circuit/means (as a multiplexer) connected to the M/S Half speed circuit for selecting the one or more phase signals based on control signals C0, C1, and C2 (shown in Fig.7 C_{trl} & on page 893, the right column, lines 6-7 & 15-17);

a /32 Low speed circuit/means (as an asynchronous divide-by-N block, page 891, the left column, the last 5 lines) connected to the Phase-select circuit to generate a F_{out};

a Frequency Control circuit/means (as the phase control) generating the control signal C_{trl} in response to C0, C1 and C2 (as the D-CTRL word signal), a Mode-input (as MOD signal), and a feedback signal outputted by the /32 Low speed circuit to the Phase-select circuit.

Regarding **claim 2**, Craninckx et al. teaches the low Mode-input disabling the Frequency Control (page 891, the left column, the last 7 & 6 lines).

Regarding **claim 3**, Craninckx et al. teaches the high Mode-input enabling the Frequency Control (page 891, the right column, the lines 3-4).

Regarding **claim 4**, in Fig.7, Craninckx et al. teaches the Phase-select selecting one of the multiple phase signals F4.I, $\overline{F4.I}$, F4.Q, and $\overline{F4.Q}$ based on the values of C0, C1, and C2 (on page 893, the right column, lines 6-7 & 15-17).

Regarding **claims 5 & 6**, in Fig.7, Craninckx et al. teaches the division ration is $N+C/4$, where the value of C corresponds to the number of changes of the Frequency Control signal C_{trl} in one period, and the C is 4 (the 4 values are C1 C0 & C2 C0 which

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are 00, 01, 01, 11). Hence the division ration is $N + 4/4 = N + 1$, the divide-by-129 (page 891, the right column, lines 1-4).

Regarding **claim 7**, in Fig. 3, Craninckx et al. teaches the Fin is a differential signal (page 891, the left column, the last paragraph, the lines 1-3).

Regarding **claims 8 & 10**, in page 891, the right column, lines 1-2, Craninckx et al. teaches that when the Mode-input is high, the Frequency Control block is enabled (selecting the phase signals outputted from the M/S Half speed block) and in turns the ratio of division increasing (such as from 128 to 129).

Regarding **claim 11**, in page 891, the right column, lines 14-16, Craninckx et al. teaches the dual-modulus operation of the prescaler.

Regarding **claim 12**, in Fig.3, Craninckx et al. teaches the Phase-select selecting four phases: F4.I (0 degree), F4.Q (90 degree), $\overline{F4.I}$ (180 degree), and $\overline{F4.Q}$ (270 degree).

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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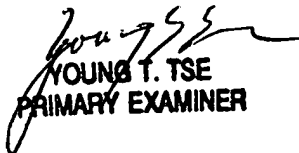
extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M. Chang whose telephone number is 571-272-3041. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay K. Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Edith Chang
September 13, 2005


YOUNG T. TSE
PRIMARY EXAMINER